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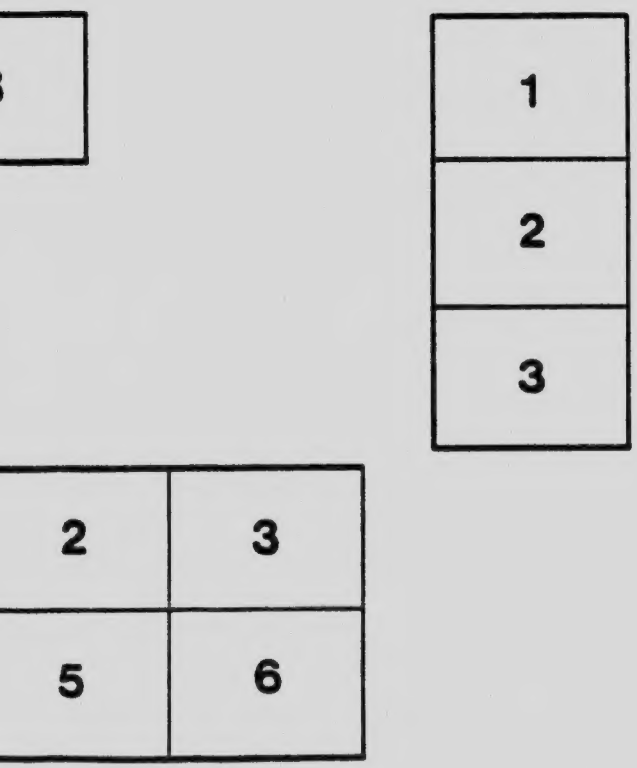

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MANITOBA DEPARTMENT OF AGRICULTURE

How to Spot Potato Top Diseases in July

International Institute Branch
SEP 29 1919
DEP'T. OF AGRICULTURE

Healthy Plant with Leaf Roll on either side

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By Authority of Hon. Valentine Winkler, Minister of Agriculture and Immigration

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How to Spot Potato Top Diseases in July

Some varieties roll badly others are quite free. Often the difference is in the seed

The top diseases of potatoes do more harm than the tuber diseases, often lessening the yield by one-half. The worst top diseases are Leaf Roll, Black Leg, Brown Ring, Black Scurf and Leaf Mosaic; and in this order of importance in the Kildonan-St. Vital district in 1918. July is the time to spot potato hills that carry hereditary diseases and thus prevent the spread of these troubles by seed.

Typical Leaf Roll with clustered tubers

Leaf Roll, which reduces the crop one-half and passes on this hereditary unfitness by seed, may be spotted by:

Typical Rhizoctonia, showing bushy top and potatoes clustered at surface of the ground.

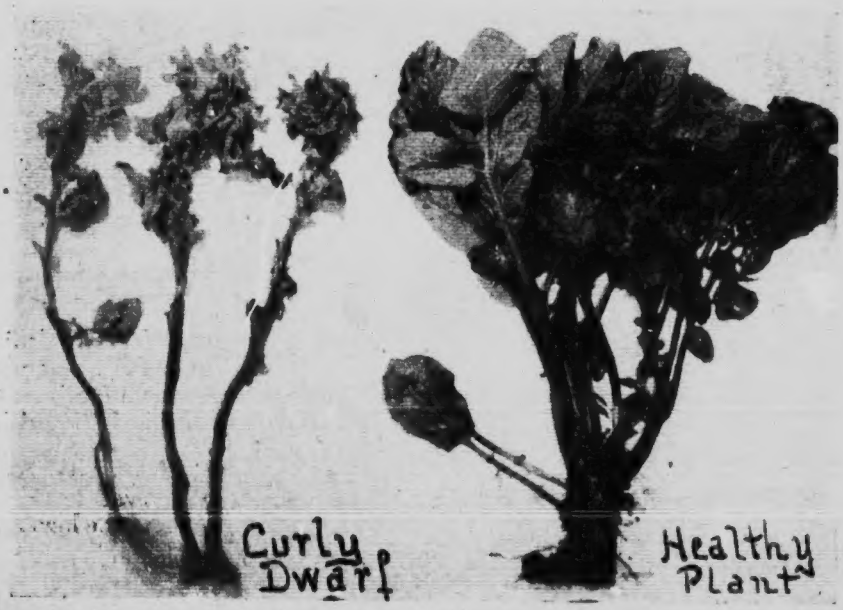
Stems pull out easily and are dry, brown and withered at the base—not slimy or soft.

On cutting these stems higher up they show brown water tubes all the way up.

On cutting across the stem end of any potatoes on such stems you will find a brown ring.

Although fit for cooking, such potatoes are unfit for seed as they spread the disease, and, as it is internal, no treatment with formalin will check it.

Rhizoctonia or Black Scurf. The disease which causes the little black spots on so many of our potatoes can, at this time of year, be recognised in its entirety, and the damage estimated.



Leaf Roll is very common and is easily spotted.

All varieties are susceptible to it by poor seed, and hot and dry conditions.

Irish Cobbler, Carman, Green Mountain and Bovee do not show as much Leaf Roll as other varieties.

Get seed potatoes from districts free from Leaf Roll.

Kenora, Thunder Bay and Northern Manitoba are free from Leaf Roll.

Black Leg causes "misses" or empty hills.

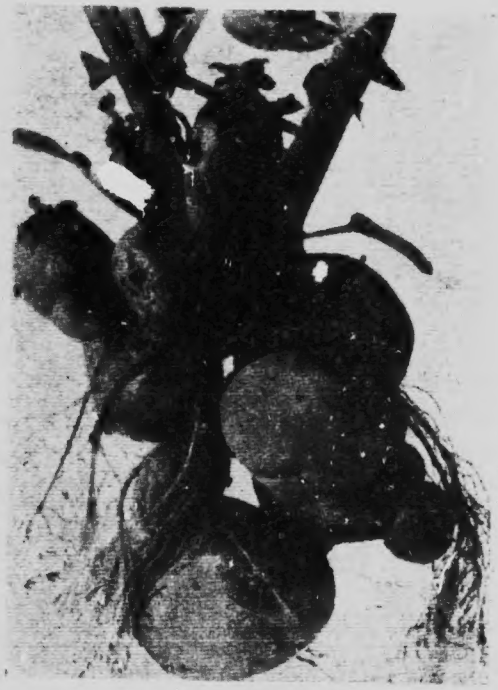
Black Leg develops early—Early Bovee worst.

A general wilting, rolling and browning of the top.

The stems often fall outward and flat on the ground.

These are rotted off by a soft bacterial rot.

Dry rot due to Fusarium.



Clusters of tubers formed at the surface of the ground after the parts below had been badly injured by Rhizoctonia.

These stems pull out of the ground easily and are soft and slimy at the base, and usually black — hence the name "Black Leg."

If potatoes are cut open, many will show a slimy, hollow centre, developing from the stem end.

These potatoes will rot completely so that such hills should be pulled up as soon as spotted and fed to the pigs.

This disease is spread by seed.

Formalin is found to check the spread.

Wilt or Brown Ring.—Fusarium Wilt resembles Black Leg in affecting the whole top, but is distinguished from it by:

A bunching or rosetting of the top leaves.

A yellowing of the lower ones.

Leaf roll beside a healthy plant

A dwarfed plant of erect, stiff growth.

A yellowish or speckled tinge to the top leaves.

An upturning of the sides of the lower leaves.

A browning or speckling of the tips of these leaves which lie on the ground.

A thickening of these leaves so that they rattle when brushed and crackle when crushed.

A glossy, thick look to the rolled leaves.

When stems are pulled out there are usually small potatoes set close in on the stem.

They are "Small potatoes and few in the hill."

These carry this hereditary weakness.

They can be culled out of potatoes only at this time of year.

Hills with Leaf Roll should be pulled up and fed to the pigs, as they are unmarketable and unsafe for seed.

The whole top goes vigorous and bushy. The stems turn purple at the top and potato apples often form. Aerial potatoes often form in the axils of the basal leaves, and clusters of tiny potatoes form at the base of the stem. These are sure signs of Rhizoctonia, and due to the fact of this disease attacking the outside of the stem in the soil and preventing the downward flow of sap, which then forces itself into extra leaves and branches and freakish potatoes above the ground. As would be expected, the potatoes in such a hill are small, and this disease is sometimes called the "Little Potato" disease.

Spindly Sprout (on left) due to poor or small set.

Leaf Mosaic. Although not so common as the other diseases, some varieties of potatoes are very susceptible to Leaf Mosaic. It is recognized by a blistering or bulging of the surface of the leaves which have a mottled appearance. When these leaves are held up to the light, it is seen that the leaf green has a mottled or mosaic appearance, due to the attack of what is thought to be a bacterial organism. Like other leaf diseases, it is hereditary, and, therefore, spread by seed, and varieties showing a tendency to Leaf Mosaic should not be grown.

A Green Mountain Potato affected with Mosaic. Photo by Murphy